

To FCC

7<sup>th</sup> March 2017

Docket number 16-413

Ex-parte for Kongsberg waiver request on Maritime Broadband Radio (MBR)

This note is filed as an answer to the comments received from the “Association of Global Automakers, Inc. And the Alliance of Automobile Manufacturers” on response of the public notice for Kongsberg MBR waiver letter.

The MBR is operating in a band that according to the ITU Radio regulations has primary allocations to mobile services and sharing in this band is inevitable as no primary allocated service has any priority over another primary allocated service.

The probability of interference from MBR towards ITS systems is low. Fix installations of ITS radiates vertically providing high attenuation in the horizontal direction, while vehicle-to-vehicle communication radiates in the horizontal directions. Most roads at the seaside have low elevation above sea level, which gives low line-of-sight distance. Roads inland at higher elevation are quickly protected by radiation by the terrain.

The probability that an MBR radiation is pointing towards a certain point on land is less than 3 %. Further, the moving nature of mobile services like MBR makes radiation in a certain direction of short duration. The probability of an interfering MBR radiation pointing at a point where also a vehicle is having need for safety communication at exactly the same time is therefore very low.

Most MBR operation areas are less than 10 km, which then may give an automatic power reduction up to 25 dB. Larger operation areas will generally only take place farther from the shore and may then be outside the line of sight from the coast.

It is understood that only the higher of the two MBR channels is operating in the same band as ITS for road safety. At operations close to the coast where road safety is relevant, the lower MBR channel could be selected.

In addition the ITS service can be protected further from MBR by defining only use of directional MBR land stations that face sea. These type of stations have a front-to-back ratio of >35 dB that are in addition to the effect of the automatic power control. Kongsberg suggest guidelines that state land stations should face sea, and keep a maximum operational distance over sea from land to secure lower power of operation in areas with sounds / bays. It must be emphasized that the maximum power is not the normal operational mode, however is needed to mitigate the effects caused by flat-sea-fading and obstructions from other vessels sailing across the signal path.

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